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ABSTRACT OF THE DISCLOSURE

Bioelectric impedances are measured by using a plurality of electrodes brought into contact with parts of a living body. Muscle volumes and maximum voluntary contractions in body parts such as both hands and feet are calculated from the measured bioelectric impedances. A mechanomyogram when several degrees of loads are imposed on a muscle is also measured, the mechanomyogram data being frequency analyzed so as to determine average frequency and amplitude data. The amounts of actions (frequency of emission) of muscle fibers are calculated from inflection points thereof, and the type of muscle (muscle fibers) and muscle fatigue of the subject are determined, so as to easily and accurately measure a maximum voluntary contraction.